

A 5 5. (Once amended) The matrix of Claim 1, wherein the oxygen is formed by an *in situ* production of oxygen.

6 6. (Once amended) The matrix of Claim 5, wherein the *in situ* production of oxygen results from the decomposition of a peroxide.

A 7 12. (Once amended) The matrix of Claim 1, wherein the polymer comprises a natural or synthetic polymer.

Please add the following new claims:

A 5 21. (New) The matrix of Claim 2, wherein the active agent comprises gases, anti-microbial agents, anti-fungal agents, anti-bacterial agents, anti-viral agents, anti-parasitic agents, mycoplasma treatments, growth factors, proteins, nucleic acids, angiogenic factors, anaesthetics, mucopolysaccharides, metals pharmaceuticals, chemotherapeutic agents, herbicides, growth inhibitors, anti-fungal agents, anti-bacterial agents, anti-viral agents and anti-parasitic agents, mycoplasma treatments, growth factors, proteins, nucleic acids, angiogenic factors, anaesthetics, mucopolysaccharides, metals, wound healing agents, growth promoters, indicators of change in the environment, enzymes, nutrients, vitamins, minerals, carbohydrates, fats, fatty acids, nucleosides, nucleotides, amino acids, sera, antibodies and fragments thereof, lectins, immune stimulants, immune suppressors, coagulation factors, neurochemicals, cellular receptors, antigens, adjuvants and radioactive materials.

14 22. (New) The matrix of Claim 21, wherein the gases comprise oxygen, nitrogen, carbon dioxide, and noble gases.

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15 23. (New) The matrix of Claim 21, wherein the antimicrobial agent comprises isoniazid, ethambutol, pyrazinamide, streptomycin, clofazimine, rifabutin, fluoroquinolones, ofloxacin, sparfloxacin, rifampin, azithromycin, clarithromycin, dapsone, tetracycline, erythromycin, ciprofloxacin, doxycycline, ampicillin, amphotericin B, ketoconazole, fluconazole, pyrimethamine, sulfadiazine, clindamycin, lincomycin, pentamidine, atovaquone, paromomycin, diclazair, acyclovir, trifluorouridine, foscarnet, penicillin, gentamicin, ganciclovir, iatroconazole, miconazole, Zn-pyrithione, silver salts, chloride, bromide, iodide and periodate.

24. (New) The matrix of Claim 21, wherein the growth factor agents comprise basic fibroblast growth factor, acidic fibroblast growth factor, nerve growth factor, epidermal growth factor, insulin-like growth factors 1 and 2, platelet derived growth factor, tumor angiogenesis factor, vascular endothelial growth factor, corticotropin releasing factor, transforming growth factor α and β , interleukin-8, granulocyte-macrophage colony stimulating factor, interleukins, and interferons.

17 25. (New) The matrix of Claim 21, wherein the mucopolysaccharides comprise heparin, heparin sulfate, heparinoids, dermatitin sulfate, pentosan polysulfate, chondroitin sulfate, hyaluronic acid, cellulose, agarose, chitin, dextran, carrageenan, linoleic acid, and allantoin.

18 26. (New) The matrix of Claim 21, wherein the proteins comprise collagen, cross-linked collagen, fibronectin, laminin, elastin, and cross-linked elastin.

19 27. (New) The matrix of Claim 21, further comprising adjuvants, zinc and silver.

20 28. (New) The oxygen-delivery matrix of Claim 1, wherein the biocompatible matrix comprises a stranded configuration.

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29. (New) The matrix of Claim 27, wherein the polymer comprises a natural or synthetic polymer.

30. (New) The matrix of Claim 28, wherein the polymer comprises collagen, gelatin, chondritin, calmodulin, cellulose, agar, agarose, animal hide, hyaluronic acid, dextran, alginate, polylysine, resorbable polymers, polyacrylamide, polymethacrylate, polyacrylate, polybuterate, polyurethane foam, polyether, silastic, silicone elastomer, rubber, nylon, vinyl and cross-linked dextran.

23 31. (New) The matrix of Claim 1, further comprising a water loss control agent comprising petrolatum, glycolipids, ceramides, free fatty acids, cholesterol, triglycerides, sterylesters, cholesteryl sulfate, linoleic ethyl ester and silicone oil.

24 32. (New) The matrix of Claim 1, further comprising a plasticizer comprising glycerol, water, propylene glycol and butanol.

25 33. (New) The matrix of Claim 1, further comprising a hydration control agent comprising isopropyl alcohol, ethanol, glycerol, butanol, and propylene glycol.